



# The Great Lakes Restoration Initiative



## Toxics, Areas of Concern, and the Great Lakes Restoration Initiative

Recognizing the importance of the Great Lakes to our nation, President Obama made their restoration a national priority. The resulting Great Lakes Restoration Initiative (GLRI) is the largest investment in the Great Lakes in two decades. The GLRI Action Plan identifies five issues requiring urgent action: Toxics and Areas of Concern; Invasive Species; Nearshore Health and Nonpoint Source Pollution; Habitat and Wildlife Protection and Restoration; and Monitoring, Communication, and Partnerships. A task force of 16 federal agencies, including the National Oceanic and Atmospheric Administration (NOAA), has been charged with implementing initiatives to address these focus areas over a five-year period (FY 2010 – 2014).



Credit: R. Greaves



*MODIS satellite image (top).  
Quagga mussels in Lake Michigan  
(center). Mussel Watch sample  
processing in Milwaukee (bottom).*

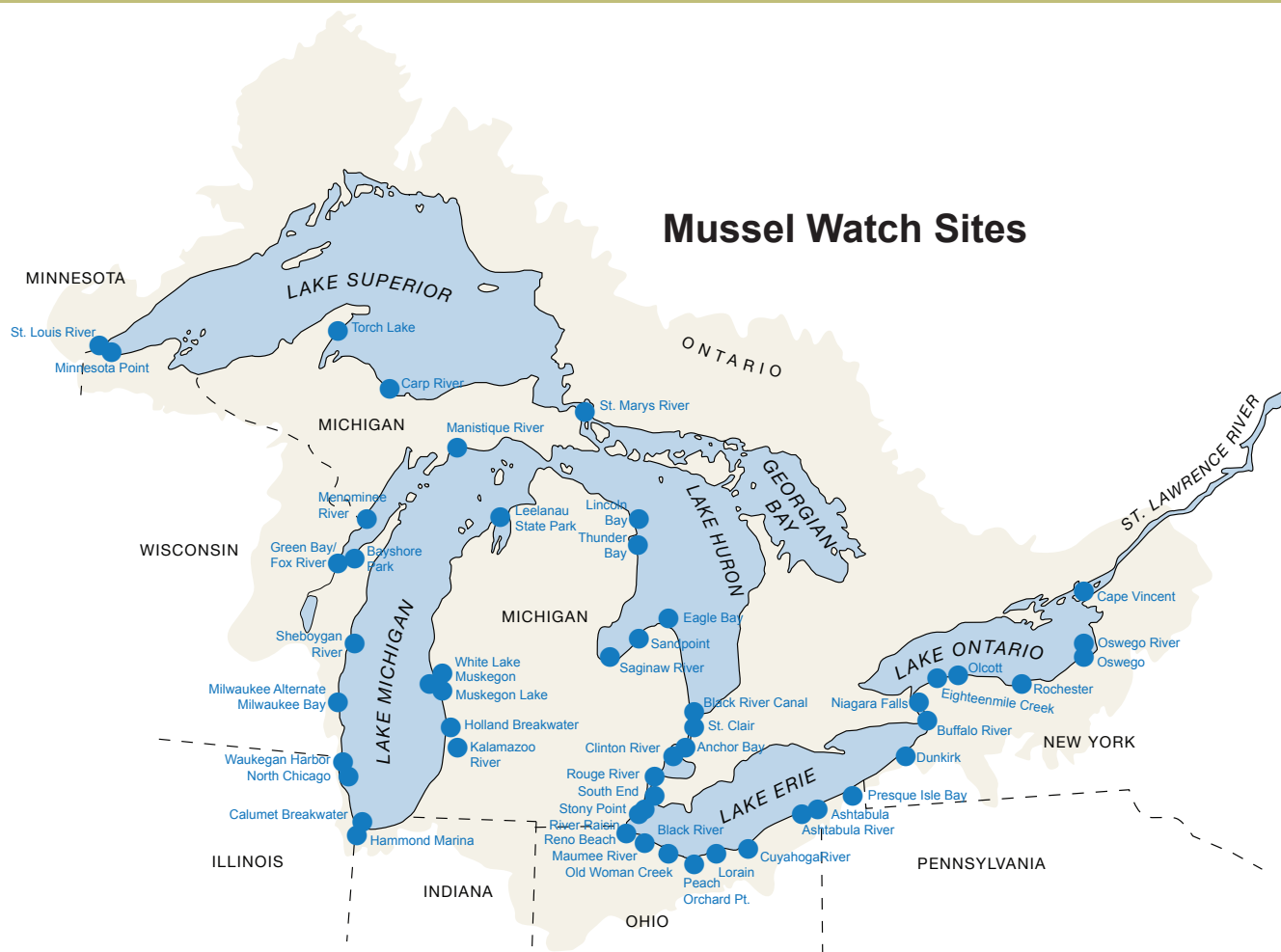
Significant progress has been made in reducing point sources of pollution and concentrations of several persistent toxic substances in the Great Lakes. Unfortunately, challenges still remain. Pollutants left over from past practices, referred to as “legacy contamination,” continue to circulate through the ecosystem and warrant fish consumption advisories in the Great Lakes. In addition, newer chemicals such as pharmaceuticals and flame retardants are now being detected in Great Lakes waters and require immediate attention.

Areas of Concern (AOCs) are among the most heavily contaminated areas in the Great Lakes, with an estimated 43 million cubic yards of contaminated sediment persisting in the remaining 29 U.S. AOCs. The GLRI provides much-needed resources to clean up toxic substances and delist remaining AOCs. Indeed, with input from citizens, the GLRI Task Force identified AOC cleanup as one of the three key priorities guiding restoration for 2012 and 2013. GLRI support has allowed NOAA to launch new initiatives addressing toxics and contamination, as well as to vastly expand established projects.

### **Project Highlight: NOAA’s Mussel Watch Program**

NOAA’s Mussel Watch Program is providing critical information to help inform AOC delisting. Mussels are widely used as sentinel organisms to monitor chemical pollution in the aquatic environment. Mussels are filter feeding, sessile bottom dwellers that bioaccumulate many contaminants and provide time-integrated observations of chemical contamination in the ambient environment.

The Mussel Watch Program initiated monitoring in the Great Lakes in 1992, collecting zebra and quagga mussels at sites ranging from as far west as Duluth, Minnesota, across the Great Lakes, and eastward to Cape Vincent, New York. Chemical analyses of the contaminants in mussel tissue provide a wealth of environmental monitoring data that can be used to: 1) track the status and trends



### For additional information on NOAA's Mussel Watch Program:

Ed Johnson, Physical Scientist  
NOAA National Centers for Coastal Ocean Science  
Ed.Johnson@noaa.gov  
(301) 713-3028 x149

Kimani Kimbrough, Physical Scientist  
NOAA National Centers for Coastal Ocean Science  
Kimani.Kimbrough@noaa.gov  
(301) 713-3028 x114

### For additional information on NOAA's GLRI work:

Rebecca Held, NOAA GLRI Program Coordinator  
Great Lakes Environmental Research Laboratory  
Rebecca.Held@noaa.gov  
(734) 741-2339

of over 150 contaminants in the Great Lakes; 2) track the effectiveness of pollution prevention legislation and remediation efforts such as the GLRI; and 3) assess the environmental impacts in the event of catastrophic environmental disasters.

With support from the Great Lakes Restoration Initiative, the Mussel Watch Program has been able to expand to almost all U.S. AOCs in the Great Lakes. Monitoring in these most vulnerable areas provides biologically relevant data to monitor progress toward beneficial use impairment targets and, ultimately, contribute to the delisting of AOCs. The data from AOCs can be meaningfully interpreted by leveraging long-term monitoring data from historic Mussel Watch sides that lie outside of AOCs.

### FUNDING

FY 2010: \$200,000

FY 2011: \$324,000

FY 2012: \$385,000

